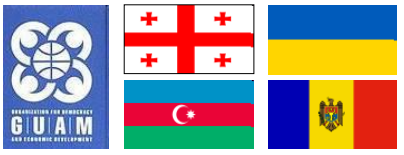
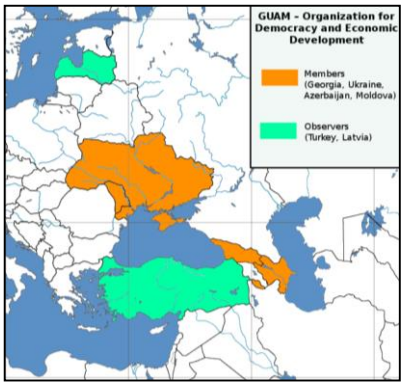
SCIENCE & TECHNOLOGY CENTER IN UKRAINE

Summary of GUAM Regional Collaboration in Nuclear Forensics

December, 2016

Ukraine as a Regional Nuclear Forensics Hub for GUAM





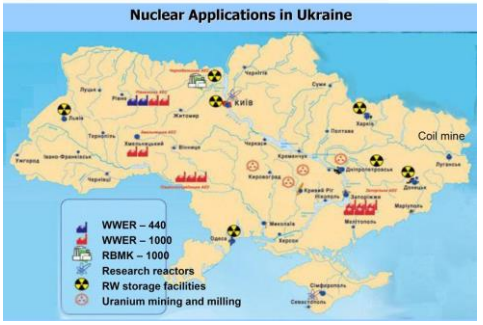
- The **GUAM Organization for Democracy and Economic Development** is a regional organization of four post-Soviet states: **Georgia**, **Ukraine**, **Azerbaijan**, and **Moldova**.
- GUAM co-operation was established at the consultative forum held in Strasbourg in 1997.
- GUAM's Charta was signed during a summit in Yalta on June, 2001.
- GUAM's objectives:
  - promoting democratic values,
  - ensuring stable development,
  - **enhancing international and regional security**, and
  - European integration.

Using a Regional Approach to International Nuclear Forensics

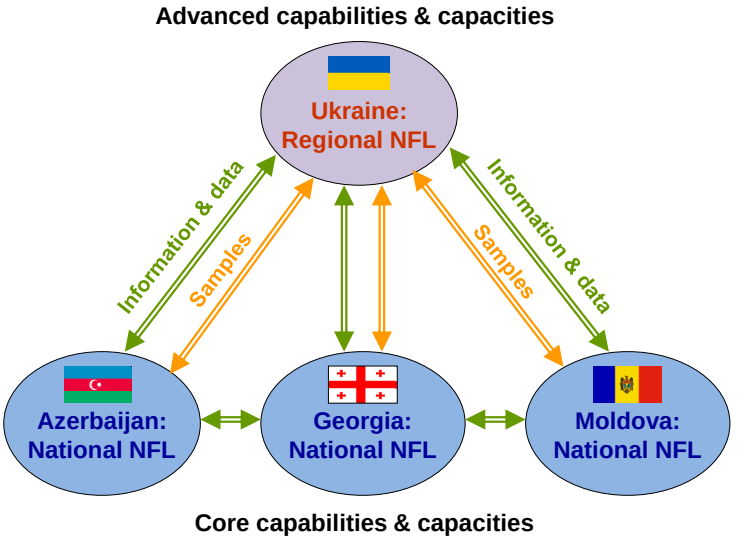
- Nuclear forensic analysis and interpretation requires infrastructure and experience to respond in concert with first order tasks of material detection and interdiction
- This level of technical capacity is not practical for every nation

Ukraine is an obvious regional leader for nuclear forensics

- Existing knowledge and scientific infrastructure
- Capacity and motivation to sustain a long term investment in technical and analytical skills
- Willing to work with and provide additional services to Moldova, Azerbaijan, Georgia, others
- Ideal to serve as a regional leader for advanced nuclear forensic capabilities



Overall Approach to Regional Nuclear Forensics in GUAM



How do we bring the GUAM, the U.S., and EU together to do integrated NF program work?

- The Science and Technology Center in Ukraine is the central coordinating hub for the multi-party NF activities
- STCU coordinates all points of contact within the U.S., EU, and GUAM, helping to identify the leaders in NF in each GUAM country
- STCU handles all administrative and financial issues associated project implementation, organizing coordination meeting, and… with the numerous funding agencies and recipient organizations
- Later in the process, the ability to add Armenia (training) to the regional NF hub was facilitated by STCU in cooperation with the ISTC

U.S., EU, and UA saw an opportunity to establish a regional Nuclear Forensics program

- The U.S. government effort was spearheaded by a number of different agencies and contribution amounts:
  - U.S. Dept of Energy's National Nuclear Security Administration/Global Initiatives for Proliferation Prevention (GIPP) = $1,431,012
  - U.S. DOE NNSA/Confidence Building Measures (CBM) = $150,000
  - U.S. Dept of State/Office of Weapons of Mass Destruction Terrorism (ISN/WMDT) = $685,000

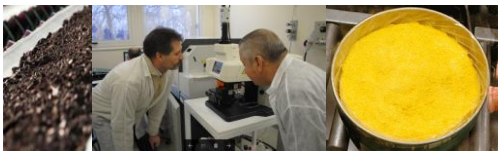
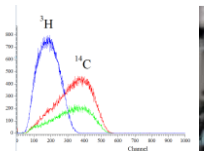
  Total U.S. contribution = $2,266,012
- The European Union's effort was led by the European Commission's DG DEVCO and Joint Research Centre (JRC), as well as the Institute for Transuranium Elements (ITU).

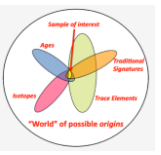
  Total E.U. contribution of €1,318,744
- Ukrainian institutes provided in-kind funding of **$428K**

Total Funding for GUAM Nuclear Forensics Program ~ $4.4M

STCU Nuclear Forensics Projects

- **STCU Project P464: Selecting Representative Samples of Uranium Ore and Ore-Concentrates from Ukrainian Deposits and Their Integrated Investigation**
  - **$150k provided by DOE/NNSA/CBM**
  - **Completed:** Samples are being analyzed through other projects
- **STCU Project P465: Attribution Signatures of Uranium Bearing Materials**
  - **$700k in US funding to Ukraine provided by USDOE/NNSA/GIPP**
  - **$210K co-funded by Ukraine**
  - **Completed:** Various techniques for determination of Uranium and coefficient of radioactive equilibrium and other attribution signatures in uranium bearing samples have been developed.

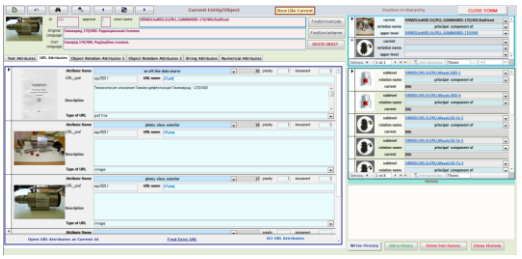



STCU Nuclear Forensics Projects (2)

- **STCU Project P460: Development of Experimental Samples for Nondestructive Analysis of Uranium Materials**
  - **$410k in US funding to Ukraine provided by USDOE/NNSA/GIPP**
  - **$123K co-funded by Ukraine**
  - **Completed:** The standard working reference samples for nondestructive analysis of uranium materials, which are analogues of fresh nuclear fuel for different nuclear power plants were developed and tested.
- **STCU Project P461: Enhancing National Capabilities and Expertise in Nuclear Forensics**
  - **$ 322k in US funding to Ukraine provided by USDOE/NNSA/GIPP**
  - **$ 96k co-funded by Ukrainian, Georgian, Azeri, and Moldovan Institutes**
  - **Completed:** Three training sessions were held in Kiev at the Kiev Institute for nuclear research.

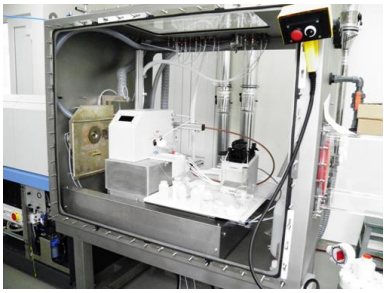
STCU Nuclear Forensics Projects (3)

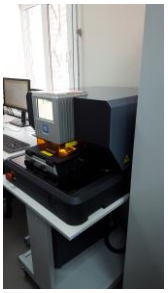
- **STCU Project P459: National Nuclear Forensics Libraries Project in Ukraine**
  - **$685k provided by USDOS/ISN/WMDT**
  - **Project underway:** Database structure and nuclear materials data sources are being established. Developed a client's software for remote users of pilot project of Nuclear Forensics Database based on standard Web browsers (Firefox, Opera, Safari, Google-Chrome).



STCU Nuclear Forensics Projects (4)

- **STCU Proposal 9901: Establishing a Regional Nuclear Forensics Network (Laboratory at KINR)**
  - **€ 919k in EU funding provided by EC/DEVCO**
  - **Project underway:** Laboratory equipped. Accreditation procedures for the RNFL in Ukraine have been started.
- **STCU Proposal 9902: Establishing a Regional Nuclear Forensics Network (Network Structure on RNFL KINR and Mobile Laboratories in Georgia, Azerbaijan, and Moldova)**
  - **€ 400k in EU funding provided by EC/DEVCO**
  - **Project underway:** Procurement procedures for equipment purchase have been started.





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